

# HFC Plant Optimization & Splicing Services

## HFC (Hybrid Fiber Coax)

Maintain and upgrade your HFC Distribution Network to support your growing customer demands and to ensure your network is at the highest quality level to support that growth.

There are 6 key areas that need to be aligned to get the highest output of your HFC network, and expand the network's capacity. AMT's Services group can help you maximize your network and get the most out of the capital you have already invested, and prepare you for upgrades that need to occur.

### 1. Inventory Active Plant Operational Parameters.

Collecting the operational parameters of bandwidth, channel bonding, forward/reverse split, maximum number of amplifiers and line extenders beyond the optical nodes is the first step to document the network. The fiber, operational and spare, and coax, size and age, of the plant is inventoried, creating a benchmark of the current system and situation to improve planning of maintenance and upgrade activity.

#### Document HFC Operational Parameters:

- Signal generating electronics make and model at headend and hubs.
- Channel loading – number of analog and QAM Channels.
- System or zone operational bandwidth i.e. 550, 750 MHz or 1 GHz.
- Two-way split frequencies.
- Transmitter wavelengths – Forward – Include any WDM.
- Return analog or digital.

#### Document Node Operational Parameters (per node)

- Make and model number of node.
- Forward configuration 1x4, 2x2, 4x4.
- Reverse configuration 4x1, 2x2, 4x4.
- Return analog or digital.
- Return transmitter wavelengths – Include any WDM.
- Number of amplifiers and line extenders on each forward leg.

#### Document Amplifiers and Line Extenders

- Make and model number
- Designed operational frequency

#### Document HFC Passives

- Make and Model Number
- Rated bandpass frequency



# HFC Plant Optimization & Splicing Services

## 2. Walkout As-Built

AMT visually inspects the current physical location of all the elements of an HFC Outside Plant. With the current design maps provided by the operator, nodes are checked pole by pole as the cable plant exists to validate the prints with reality. Plant discrepancies and problems found are documented on the maps using a coded checklist. "Redline maps" are returned to Operator and findings reviewed, providing accurate drawings for plant maintenance and upgrade activities.

## 3. Sweep Outside Plant

AMT sweeps customer specific nodes and respective amps, optimizing node adjustments and alignment of the forward and reverse amplifiers, thereby bringing the amplifiers into operational spec to lower the noise floor. AMT places amplifier stickers and completes documentation for each node area. AMT will complete the node book documenting the system parameters and data collected and leave that with the operator.

## 4. Locate and correct outside plant problems

AMT finds and corrects plant problems such as bad splitters, cracked cables, bad amplifier housing, etc. Cable replacements are excluded because of the nature of changes that may need to be done if a cable must be replaced which is the responsibility of the operator. This topic can be discussed and quoted separately if required.

## 5. Suppress Noise

AMT isolates ingress/noise generated by subscriber wiring at the tap with a filter and refers the trouble ticket to the "assigned in-home team" for corrective action. These will be notated so that they can be tracked for complete resolution by operator.

## 6. Locate and Correct Ingress Noise at Subscriber's residence (Operator's Responsibility)

AMT identifies where ingress problems are, and then the 'Assigned in-home team' detects signal leakage and noise ingress at the customer premise location, checks home grounding, isolates problem, and replaces bad drops, splitters, and interior wiring.

## Splicing Services: Coaxial Splicing & Retrofit

One of the vital links to a cable system is the splicing of new electronic equipment. AMT has experienced coax cable personnel who are trained to splice any equipment per the needs of the operator's technical specifications.

Retro-fit splicing projects can be one of the most challenging projects in the cable industry. Replacing old equipment with newer higher frequency equipment on existing active coaxial lines requires highly trained personnel and experienced managers. Keeping operators online while active cables are being spliced takes a good team of experienced personnel to minimize customer outages. We have the personnel and managers with this specialization.

